

VocaNova 2025

Overview

VocaNova 2025 is a comprehensive vocabulary learning mobile application designed to enhance users' understanding of word relationships, synonyms, and antonyms through interactive lessons, engaging games, and comprehensive quizzes. Built with modern Android development practices using Jetpack Compose and Firebase.

Features

Learning Modules

- 4 Comprehensive Video Lessons
 - Week 1: Understanding Word Relationships
 - Week 2: Expanding Vocabulary
 - Week 3: Context Clues
 - Week 4: Word Nuances
- Interactive Quizzes with immediate feedback
- Progress Tracking across all learning activities
- Daily Word feature with pronunciation and examples

Gamification System

- Flying Words Game: Catch falling words and match them correctly
- Green Light Red Light: Fast-paced synonym/antonym matching
- Swipe Game: Directional word matching with gestures
- Achievement System with badges and milestones
- Currency System to earn and spend coins
- Leaderboards and score tracking

Shop & Rewards

- In-app Currency earned through gameplay
- Power-ups and Items available for purchase
- Achievement Rewards for learning milestones

- Daily Rewards system

Audio & Media

- Text-to-Speech pronunciation for all words
- Video Player with full-screen support and orientation handling
- Background Music and sound effects
- Global Mute functionality

User Management

- Firebase Authentication with email/password
- User Profiles with progress tracking
- Saved Words functionality
- Personal Statistics and learning analytics

UI/UX Design

Design Principles

- Material Design 3: Modern, consistent design language
- Accessibility First: Screen reader support and proper contrast
- Responsive Layout: Adapts to different screen sizes
- Smooth Animations: Micro-interactions and transitions

Theme System

- Dynamic Colors: Adaptive color schemes
- Dark/Light Mode: System-aware theming
- Custom Typography: Optimized for readability
- Consistent Spacing: Systematic layout grid

Security & Privacy

Data Protection

- Firestore Security Rules: Server-side data validation
- User Isolation: Each user can only access their own data

- Authentication Required: All data operations require valid auth
- Input Validation: Client and server-side validation

Privacy Features

- Minimal Data Collection: Only essential user information
- Local Storage: Sensitive data stored locally when possible
- Secure Communication: HTTPS/TLS for all network requests

Performance Optimizations

Efficiency Features

- Lazy Loading: Efficient list rendering with LazyColumn/LazyRow
- State Preservation: Configuration change handling
- Memory Management: Proper lifecycle management and cleanup
- Caching Strategy: Local caching for frequently accessed data

Resource Management

- Image Optimization: Efficient image loading and caching
- Audio Management: Proper audio resource cleanup
- Network Optimization: Minimal data usage with smart caching

Supported Devices

Minimum Requirements

- Android Version: 7.0 (API level 24)
- RAM: 2GB minimum, 4GB recommended
- Storage: 100MB for app, additional for offline content
- Network: Internet connection required for initial setup

Optimal Experience

- Android Version: 10.0+ (API level 29+)
- RAM: 4GB or more
- Display: 5.5" or larger screen

- Audio: Speakers or headphones for pronunciation features

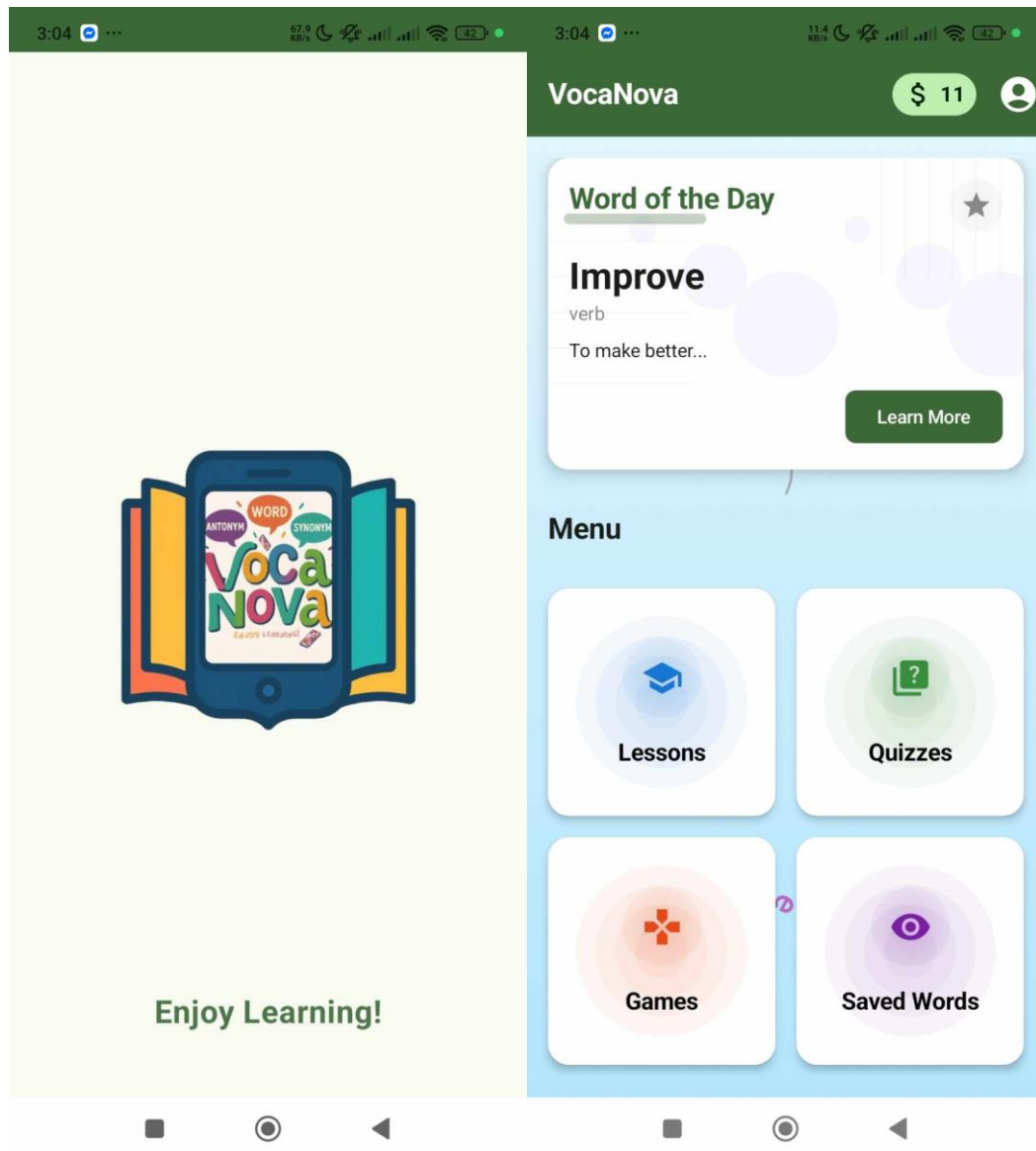
Acknowledgments

Technologies Used

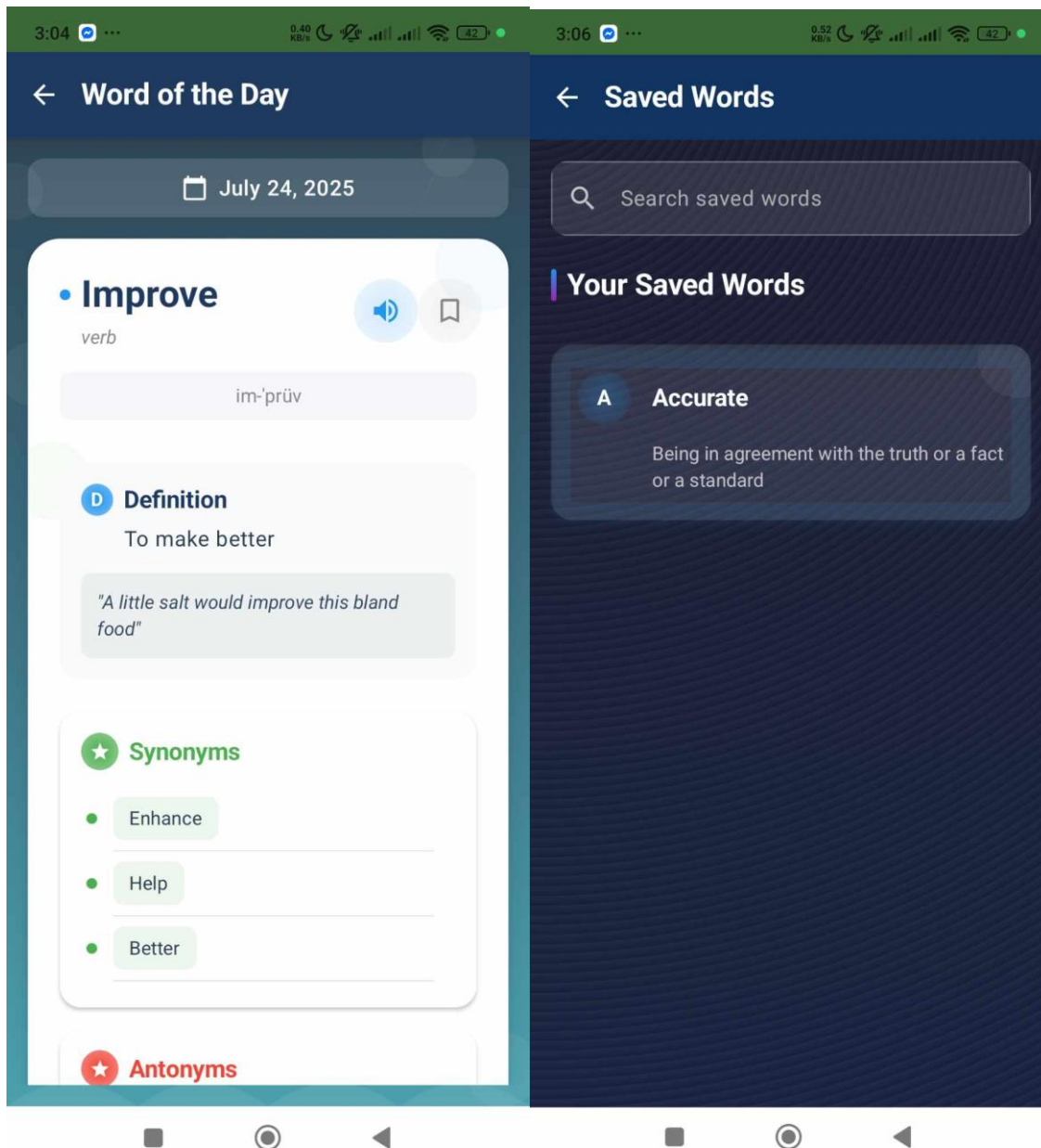
- [Jetpack Compose](#) - Modern UI toolkit
- [Firebase](#) - Backend services
- [Hilt](#) - Dependency injection
- [Media3](#) - Video playback
- [Material Design](#) - Design system

Educational Content

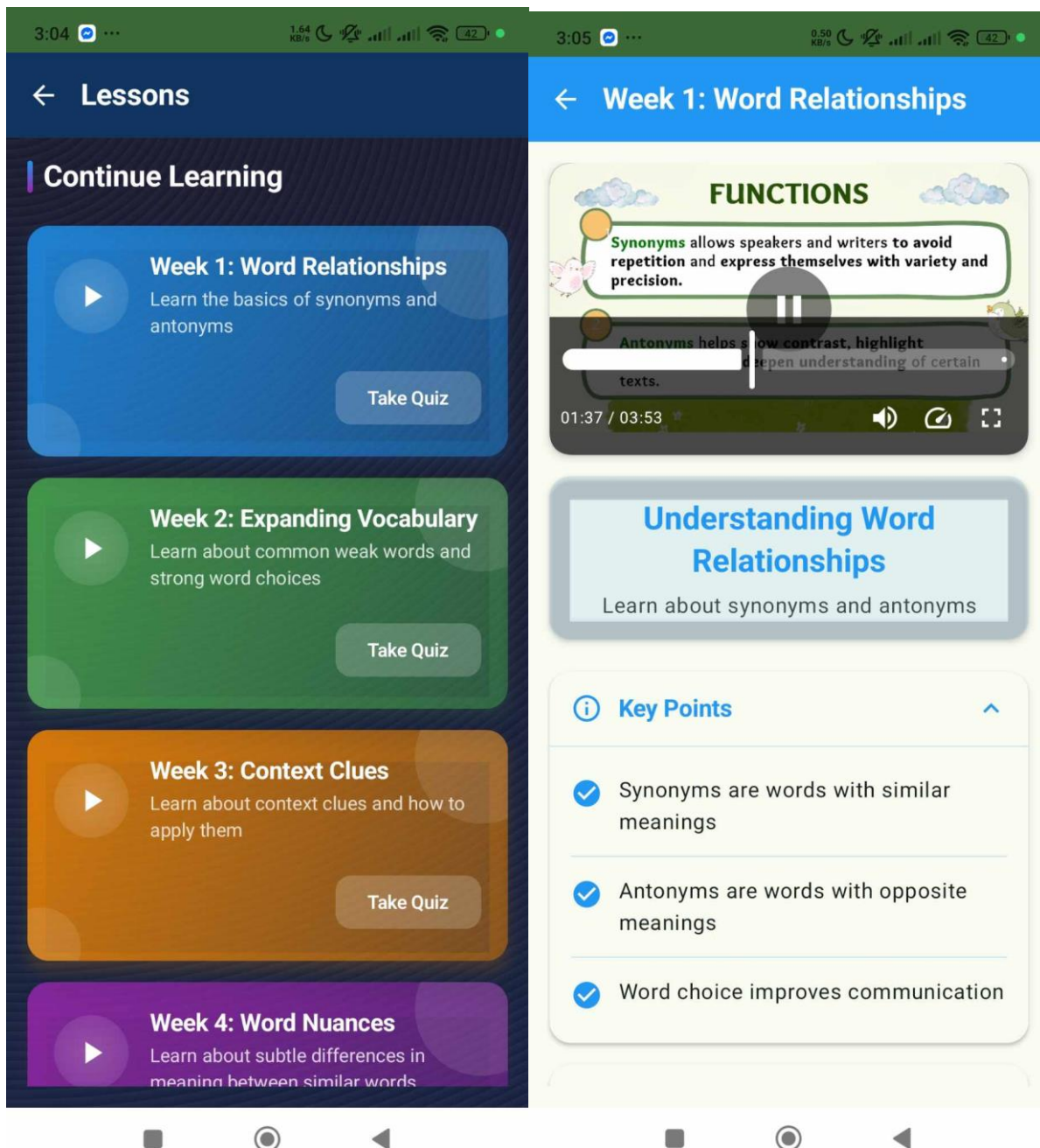
- Vocabulary lists and definitions from educational resources
- Word relationships and examples curated for learning effectiveness



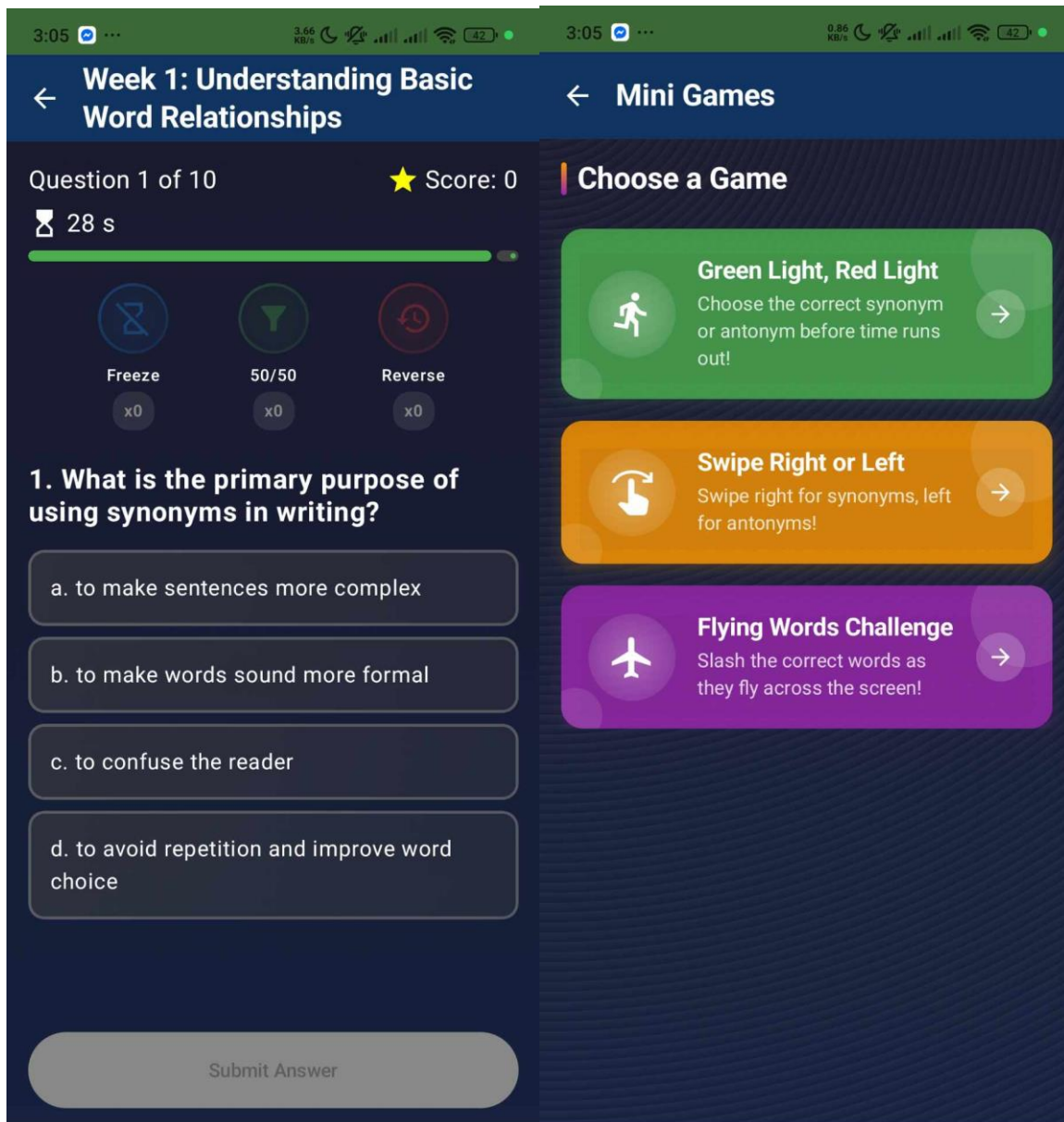
Home Page with SplashScreen



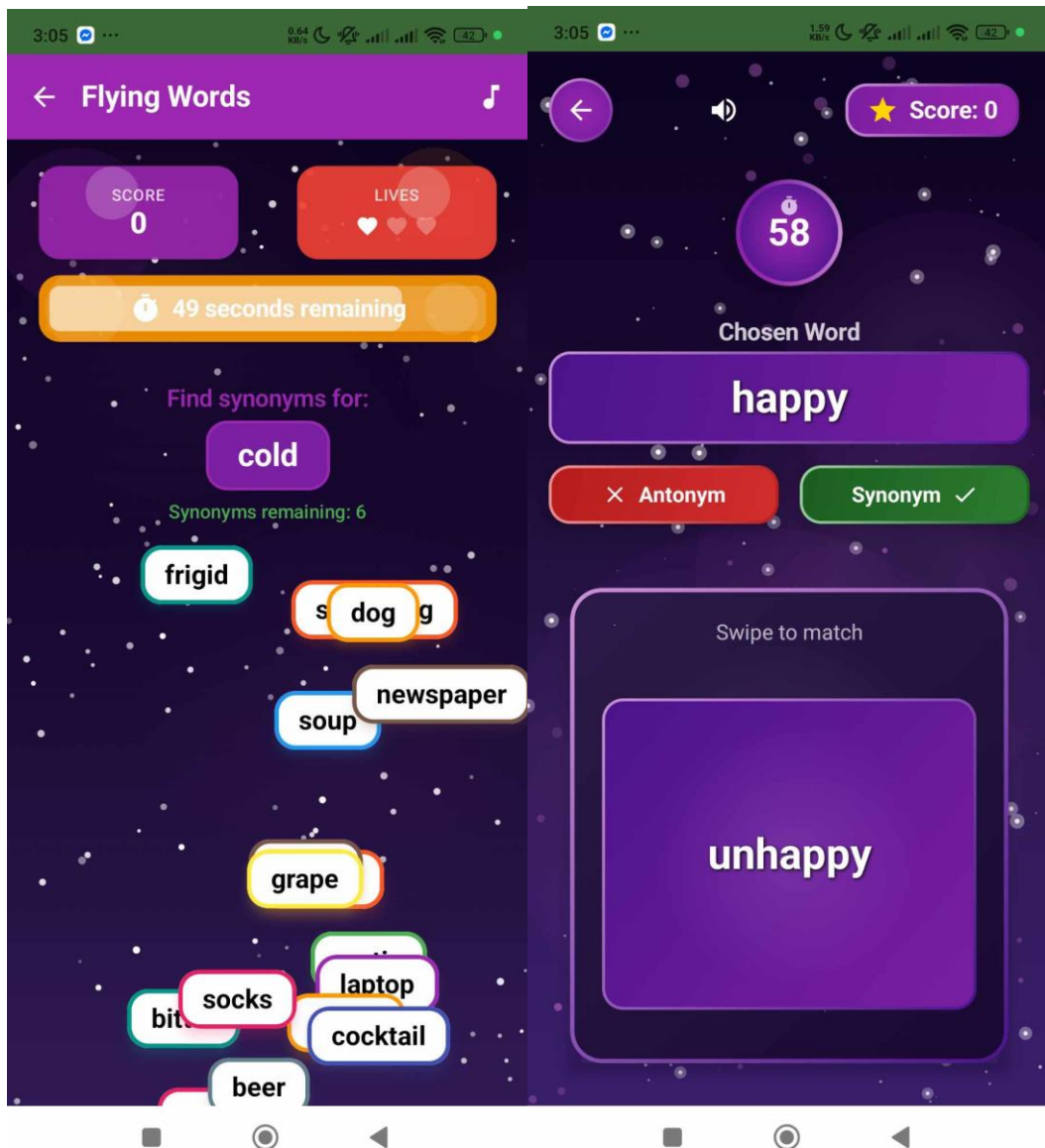
Word of the day and Saved Word Screen



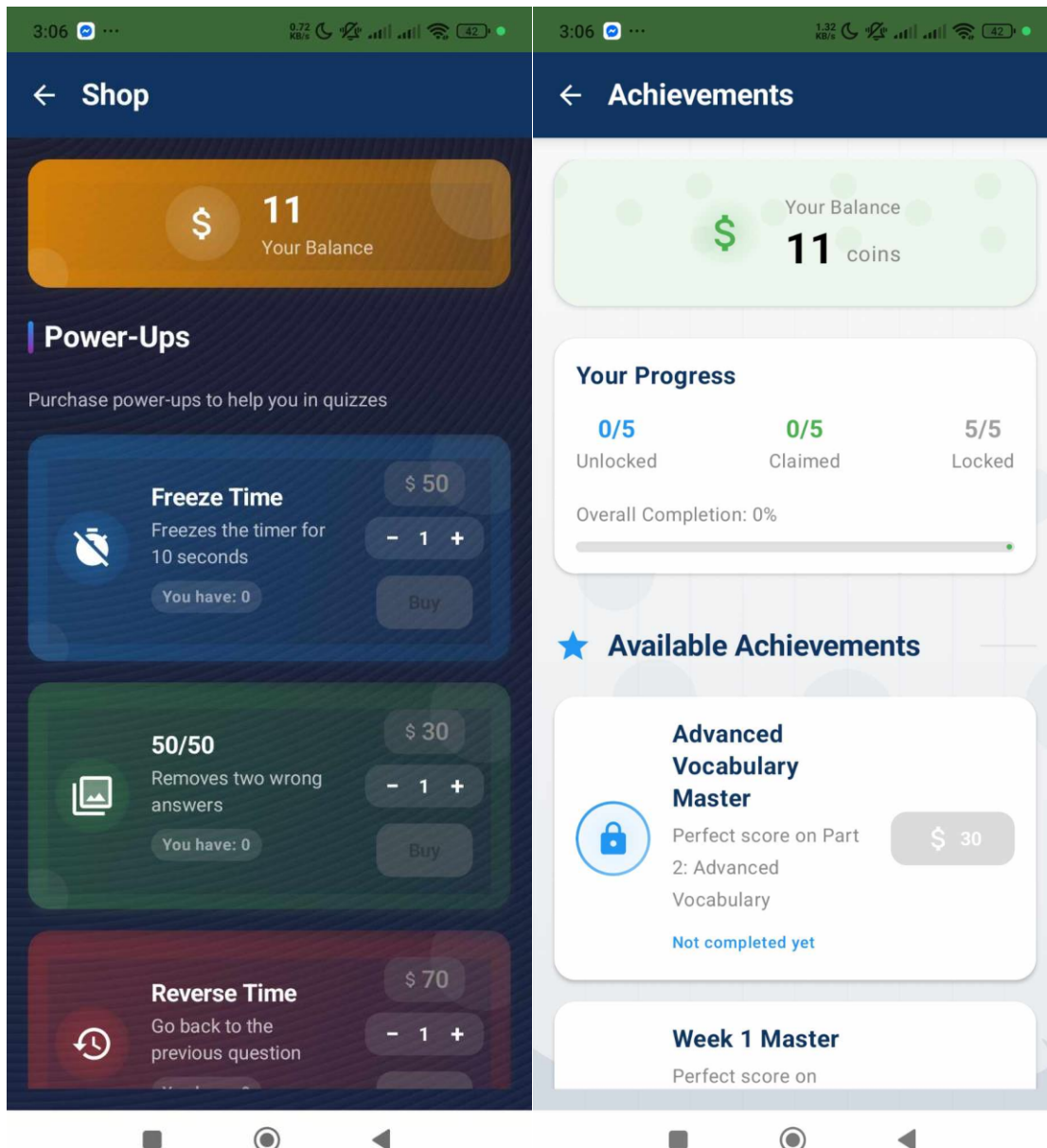
Lesson Screen



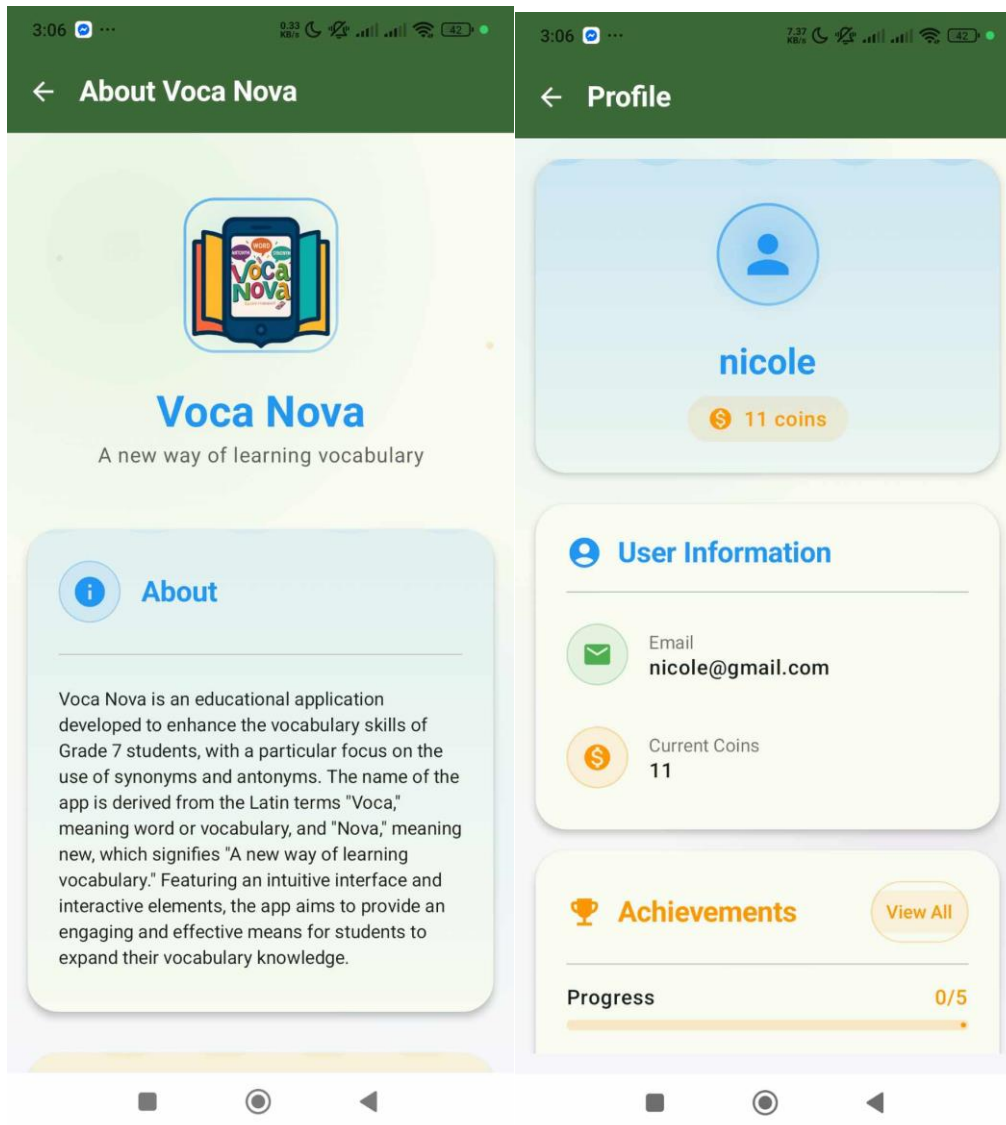
Quiz and Mini Game Screen



Mini Games Example



Shop and Achievements Screen



About and User Info Screen